

### **REMARKS**

Reconsideration and withdrawal of the rejections set forth in the Office Action dated January 3, 2006, is respectfully requested in view of this amendment. By this amendment, claims 5-6 and 11 have been cancelled and claims 7-8 have been amended. Claims 1-4 and 7-10 are pending in this application, with claims 1-4 and 9-10 withdrawn from consideration.

Claim 8 has been amended to recite the first dichroic mirror, second dichroic mirror and to recite the first to third steering mirrors comprising reflective polarizing plates. Support is found in claim 2 and in the specification, including at page 45, line 25 - page 47, line 10. It is respectfully submitted that the above amendments introduce no new matter within the meaning of 35 U.S.C. §132.

In the outstanding Office Action, the Examiner rejected claims 5-6 and 8 under 35 U.S.C. § 103(a) as unpatentable over Hirata et al. (US 6,783,242, hereinafter *Hirata*), taken in view of Kurtz, et al. (US 2005/0128392, hereinafter *Kurtz*). Claims 7 and 11 were rejected under 35 U.S.C. § 103(a) as unpatentable over *Hirata* and *Kurtz*, taken further in view of Furuhashi et al. (US 6,540,360, hereinafter *Furuhashi*). These rejections, as applied to the revised claims, are respectfully traversed.

### **Response**

Reconsideration and withdrawal of the rejection are respectfully requested. *Hirata* is used to show an image display using transmission of three primary colors, and modulators for the respective primary colors. A color separating optical system is used to separate the beam through steering mirrors. Polarizing plates are described as polarizing the corresponding primary color beams that are then combined.

Applicant's claim 8 describes:

"... a light source ... containing at least three primary colors; first to third reflective spatial light modulators ... a ... dichroic mirror for separating the beam from the light source into a first-second primary color beam and a third primary color

beam; a second dichroic mirror for separating the first-second primary color beam into a first primary ... and a second primary color beam; first to third steering mirrors comprising reflective polarizing plates for guiding the separated first to third primary color beams corresponding to the first to third reflective spatial light modulators ... wire grid type reflective polarizing plates for polarizing and separating the corresponding primary color beam into a linearly polarized beam of a first polarized state ... reflecting the linearly polarized beam of the second polarized state; a color combining optical system ... the first and third steering mirrors are disposed to be substantially oriented in the same direction, and a second steering mirror is disposed so that the optical axis of a beam injected into the second steering mirror is orthogonal to the optical axes of beams injected into the first and third steering mirrors ... the planes of polarization of two of the beams are orthogonal or parallel to each other, and the reflective faces of the first to third steering mirrors ... [and of the] first to third wire grid type reflective polarized plates are disposed skew ... ."

Hirata fails to disclose a configuration in which steering mirrors comprise reflective polarizing plates that function as pre-polarizers. Hirata therefore fails to show or suggest the use of the pre-polarizers to provide linearly polarized light to the reflective polarizing plates.

In support of this position, Applicants' invention, as presented in claim 8, describes:

(1) The first to third steering mirrors (213, 214, 215) according to Claim 8 comprise reflective polarizing plates and function as pre-polarizers. By means of the operation of the pre-polarizers, true linearly polarized light enters the following wire grid type reflective polarizing plates (220, 221, 222). This enables the inventive apparatus to realize higher contrast. Applicants refer to lines 10-18, page 36 of the specification, as well as claim 8. Hirata fails to disclose such a configuration.

(2) According to Claim 8, the first and third steering mirrors (213, 215) of the present invention are disposed to be oriented in the same direction, and second steering mirror (214) is disposed so that the optical axis of a beam injected into the second steering mirror is orthogonal to the optical axis of beams injected into the first and third steering mirrors (213, 215). Applicants refer to lines 25-30, page 33 of the specification and Figs. 14-19, which explain this claimed feature. This configuration provides effective utilization of the light emitted from a light

source and permits miniaturization of the system. This is described at lines 29, page 8-line 1, page 9 and lines 14-24, page 33 of the specification. Hirata fails to disclose such a configuration.

(3) According to Claim 8, the first dichroic mirror (207) and the second dichroic mirror (208) of the present invention are configured so that the first dichroic mirror (207) initially separates the third primary color and the second dichroic mirror (208) subsequently separates the first primary color from the second primary color. In contrast, Hirata employs a cross dichroic prism as color separating means. The Office Action states (top of Page 5), with reference to Fig. 2 of Hirata, "The first mirror is the mirror next to the lines 9w and 9b and the second is the other mirror." While Hirata uses a crossly intersected dichroic mirror for color separation, the separation with the cross dichroic prism (cross dichroic color separation method) results in a large dimension of prism. This in turn results in difficulties in high precision adhesion of prism elements and higher cost, because the diameter of cross section of beams in cross dichroic color separation method is substantially larger than that for color combining.

Further, when the color separation means is made of crossly disposed two plates instead of the use of a prism, overlapping portions of the plates cause shade and thereby thread-like irregularity appears in the image. The present invention according to Claim 8 employing dichroic mirrors each made of two plates that are disposed at absolutely separated position in space. This arrangement avoids the above-mentioned drawbacks. Also, the present invention has a configuration that can dispose two dichroic mirrors so as to accommodate the beams for color separation that have large diameter in cross section.

(4) Since the reflective faces of the first to third steering mirrors and the reflective face of the first to third wire grid type reflective polarizing plates are disposed in a skewed arrangement in the present invention, s-polarized light reflected by the steering mirrors is injected into the wire grid type reflective polarizing plates as p-polarized light. This provides a desirable relation for higher contrast. Hiram fails to disclose such configuration.

Therefore, since the reflective faces are disposed in a skewed arrangement, the polarized faces can be placed normal to the reflective face of the first to third steering mirrors and normal to the first to third wire grid type, the s-polarized light reflected by the steering mirrors is injected into the wire grid type reflective polarizing plates as p-polarized light.

Kurtz is used to show the use of wire grid polarizing plates; however does not suggest the features which are absent from Hiram.

Furuhata describes a thermal coefficient in a dust protective cover, but does not suggest the features absent from Hiram. Accordingly, a combination of Hiram with Kurtz and Furuata cannot suggest Applicants' claimed features.

In view of the foregoing, withdrawal of the rejection is respectfully requested.

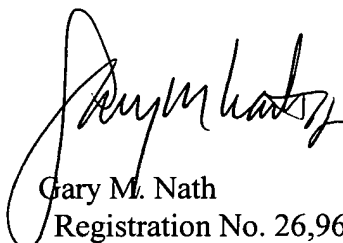
### CONCLUSION

In light of the foregoing, Applicants submit that the application is in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicants respectfully request that the Examiner call the undersigned.

Respectfully submitted,  
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